



Thursday, January 27, 2005

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## General Technical Specifications

Our Neodymium magnets

<http://www.rare-earth-magnets.com/magnets.htm>

## MAGCRAFT

## Brand Rare-Earth Magnets

### General

Rare earth magnets are magnets composed of alloys of the Lanthanide group of elements. The two Lanthanide elements most prevalent in the production of permanent magnets are Neodymium and Samarium. There are numerous alloy formulations of rare earth magnets covered under many different patents but the most common commercial varieties are Neodymium-Iron-Boron (NdFeB) and Samarium Cobalt (SmCo). Neodymium-Iron-Boron magnets are the most advanced commercialized permanent magnet material available today.

Rare earth magnets are available in sintered and bonded forms. Sintered magnets are a type of ceramic composed of the compressed powder of the alloy material being used. Sintering involves the compaction of fine alloy powder in a die and then fusing the powder into a solid material. While the sintered magnets are solid, their physical properties are more similar to a ceramic and are easily broken and chipped. Bonded magnets use a polymer base to hold the alloy powder together. The energy product of bonded magnets is much lower than that of sintered magnets. Sintered NdFeB magnets are generally plated or coated with a material to prevent corrosion. There are various coatings available. Nickel-Copper-Nickel plating has excellent corrosion resistance and durability as well as providing a clean and shiny appearance. All of our stock rare earth magnets are sintered Neodymium-Iron-Boron magnets plated in Nickel-Copper-Nickel.

### Grades

The grade of a magnet directly refers to the Maximum Energy Product of the material that composes the magnet. It in no way refers to the physical properties of the magnet. Simplistically, grade is generally used to describe how "strong" a permanent magnet material is. The energy product is specified in the units Gauss Oersted. One MG

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## Rare Earth Magnets

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have the following properties:

**Available Grades** \*

N40 (MGOe - 40)

N35 (MGOe - 35)

N30 (MGOe - 30)

**Material:**

Sintered NdFeB

**Magnetization:**

Magnetized

**Magnetization Direction:**

Thickness

**Plating:**

Ni-Ni/Ni-Cu-Ni

**Max. Operating Temp. (Deg C):**

80°

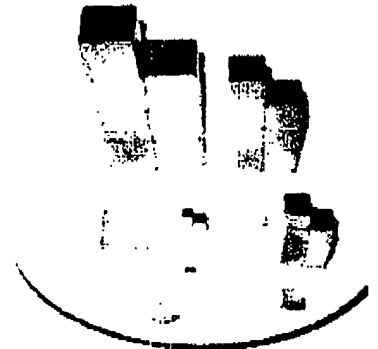
**Dimensional Tolerance:**

+/-0.005"

is 1,000,000 Gauss Oersted. A grade forty (N40) would have a Maximum Energy Product of 40 MGOe. The higher the grade the "stronger" the magnet.



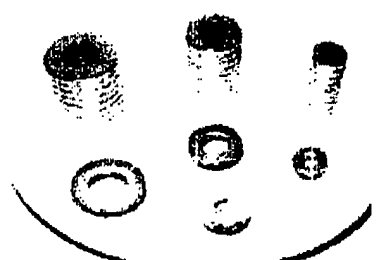
**MAGCRAFT™ Block Magnets**



**MAGCRAFT™ Cube Magn**



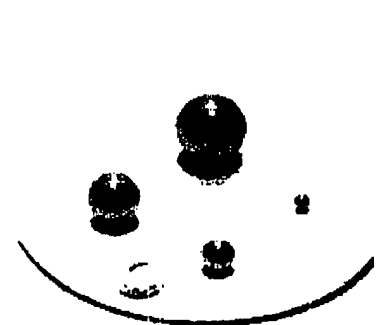
**MAGCRAFT™ Disc Magnets**



**MAGCRAFT™ Ring Magn**



**MAGCRAFT™ Rod Magnets**



**MAGCRAFT™ Sphere Magnets**



**MAGCRAFT™ Arc Segment Magnets**

**(Summary Product List)**

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